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MEETINGS OF MINING COMPANIES.

PALNURE UNITED EXPLORING COMPANY, LIMITED.

THE statutory general meeting of the Palnure United Exploring Company (Limited) was held on Saturday, December 7, in M'Millan Hall, Newton Stewart, N.B., Major C. STEWART, of Cairnsmore (Chairman of the company) presiding.

The CHAIRMAN, in the course of his remarks, said: Gentlemen—As this is merely the formal statutory meeting of the company, held in compliance with Act of Parliament, there is practically no business to be transacted. It, however, behoves me to give what information I can regarding the results of our explorations. Our object you, of course, understand, is the search for minerals on the farms of Talnotrie, Kittrick, and Corwar, and the opening up of the large veins or beds of plumbago discovered on Talnotrie farm, and that of arsenical pyrites on the farms of Corwar and Talnotrie. You will agree with me when I say that development work of this nature is necessarily slow, and that, restricted as we are to manual labour, we must be satisfied with a sure and steady progress so long as it is properly directed. Plumbago or graphite is an article that is wholly imported into this country, there being no workable deposits of this mineral known to exist in Britain. The chief source of supply of high grade ore in the Island of Ceylon. The Ceylon product is valued as high as £25 per ton, but as it comes from an enormous depth we cannot in the comparatively shallow depth to which our shaft is now sunk—namely, 74 feet—hope to obtain a quality of stuff that would at all enter into competition with Ceylon graphite. For these high grades there is only a limited demand, but lower grade cheaper stuff, such as is being imported from Italy and Germany, has a larger market for a great many industrial purposes. It is this latter quality, or something very similar to it, that our veins or beds yield. Of these beds there are two running parallel at a distance of some 300 yards, the top of the No. 1 or upper bed being elevated about 200 feet above the level of that of the No. 2 bed. It is in the lower or No. 2 bed that we have of late been conducting our operations, and the results so far, although proving little as regards increase of quality with depth, have nevertheless been of an encouraging nature. It will be remembered that our consulting engineer, Mr. E. H. Davies, F.G.S., sanctioned our opening on the plumbago at a point on the No. 2 bed, easily accessible for cartage of timber, &c., although the best quality yet found was not in the No. 2 bed. It was found in the 7 fathom shaft we sunk in the No. 1 bed, and large bodies of plumbago are known to exist in the latter. Both beds have been traced for a considerable distance, and no doubt they vary much as to their quality at different points. There is another matter worthy of remark, and that is the presence of gold in these veins. We need not be surprised at this, for everything is geologically favourable to this theory; and we have been repeatedly warned by those who ought to know (and who are no visionaries) that we might expect to meet with the precious metal in these veins. Referring to the presence of gold in the plumbago, in his report on the presence of gold in the plumbago, in his report on the concentration and analysis—made on October 11 last—of a sample from the footwall of No. 2 bed, about 10 fathoms from the surface, Mr. Davies says:—"This is, of course, a distinctly encouraging point, and makes the pyrites concentrates worth about £12 per ton. I must, however, carefully warn you not to run away with the idea that you have got a gold mine instead of one of graphite. In the sample sent, the pyrites was about 2½ per cent. of the bulk, and this on the assay would give a value of (say) 7s. per ton for the crude ore, and this should about pay the cost of mining, although I may say that in Wales the cost of mining and milling hard gold quartz is 6s. 6d. per ton. It is just possible, however, that portions of the vein contain a higher percentage of pyrites than in the sample sent. . . . If the percentage of pyrites increases that of the graphite will probably decrease, and *vice versa*." Now the assay above referred to gave only 2½ per cent. iron pyrites, and in that product 3 ounces 5 dwts. 12 grains gold per ton. Since then an assay has been made of stuff taken at random from the hanging wall (which is 30 feet from the footwall across the vein) which gave, according to Claudet, assayer to the Bank of England, 13·3 per cent. iron pyrites—an increase of 11 per cent., or five and one third times the amount of pyrites per ton. This sample was, unfortunately, not assayed for gold. Another bye-product from which we are led to expect some returns is black sand for moulding purposes. You must not think that we have been idle in the meantime in making arrangements for getting the plumbago on the market. Now that a quantity of stuff has accumulated in our drying shed, we are negotiating for the sale of some sample truck loads. That would always assist in balancing outlays. I am pleased to state that the railway companies, having been approached on the subject of rates, have signified their intention of meeting us on reasonable terms. We have, of course, the option of shipment by water, which has its advantages as well as disadvantages. As regards cartage to rail or port, we must be satisfied in the meantime with such facilities as horse and cart afford, but once the necessity arises means of transport will be found that will materially reduce that item of cost. Now a word about the arsenical pyrites. At the time of the commencement of work by the present company a fair amount had been done in tracing the vein by trenching along the surface, and a small shaft had also been sunk. From these openings a considerable quantity of ore of excellent average quality had been obtained. Fully two months ago exploration on this vein was resumed, and the results led us some four weeks ago to open a shaft, which it is intended shall be sunk 10 fathoms on the vein. At that depth a level will be driven north-east along the vein, and towards the part of the vein that on surface produced the greatest amount of arsenical pyrites. There is no arsenical pyrites whatever raised in Cornwall or Devon that can at all bear comparison with what has been obtained from our vein. We have it of the exceedingly high quality of 50 per cent. metallic arsenic, and an average assay gave 21 per cent., which is highly satisfactory indeed. We wish now, of course, to prove that the mineral is there in workable quantities, and that I have no doubt we will eventually do. But in the meantime weeks and months must elapse before the work now being energetically carried forward will have given us proof sufficient for our purpose of handing the lease over to a working company. Now, in connection with the preparation of the arsenic for the market there is a patent in the hands of one of your directors that will, I may safely say, revolutionise the entire system of smelting of these ores. By this new process it is now possible, without any cost in fuel (we have ample water power for all purposes) to produce in one operation the pure arsenic of commerce. In conclusion, I may say that at the present useful stage of our company, and, taking into account the many disadvantages under which we labour in a district so far isolated from any mining centre, we have no cause to be dissatisfied with the rate of progress. Nothing material has been disproved, and the prospects are as good as they ever were. We must just patiently await further developments, and hope for good things in the future. Mr. Davies, who is at present on an inspection tour abroad, will be here probably in January, and his report will be submitted to you. I shall be pleased to answer any questions any gentleman may be disposed to ask.

At the request of a SHAREHOLDER the CHAIRMAN gave an illustration of the relative positions of the two plumbago beds.

The MANAGING SECRETARY (Mr. John Robertson) having read his report,

The Right Hon. the Earl of GALLOWAY, K.T., proposed, and Mr. A. M'PHATER seconded, a hearty vote of thanks to the directors of the company for the energetic and business-like manner in which they had wrought for the success of the company, and to the Chairman for his very able address.

The motion having been cordially adopted, the CHAIRMAN briefly replied, and the proceedings terminated.

THE VAN RYN GOLD MINES ESTATE, LIMITED.

The first annual ordinary general meeting of shareholders in this company was held at Winchester House, Old Broad-street, on Monday last, Mr. F. A. GILLAM (Chairman of the company) presiding.

The SECRETARY (Mr. Stuart James Hogg) read the notice convening the meeting.

The CHAIRMAN said: Gentlemen—It is with a feeling of great satisfaction that my colleagues and I meet you here to-day to present to you our report and accounts for the year ending June 30, 1895. The profit and loss account, as you will notice, shows a net profit of £21,274 8s. 3d., and it is with the greatest pleasure that I can point to that to-day as being the financial result of the first years' working of this company's mine. Prior to this year the company has been in a state of development only, and unable to declare a dividend, but at this time I am happy to report that we have been able to make a satisfactory profit. This profit, we confidently expect, will be largely improved upon in future years. We are also able to render a satisfactory account of our management of the rest of your property, which, up to the present year, has remained practically undeveloped. On taking charge we found the following conditions to exist:—1. A proved mining area of ascertained value, which did not up to that time return any profit to the shareholders. 2. A proved mining area upon which little or no work had been done. 3. A large area outside of those already mentioned, about which little or nothing was known. As regards the first, we to-day show as the result of 12 month's working, a net profit of over 13 per cent. As regards the second, we decided that the area was too big for us to work with our own resources, and we, therefore, sold it, as you are aware, to the Van Ryn West Company for 70,000 fully-paid shares. That company to-day, after being provided with a large amount of working capital, has proved by actual development, the value of the property transferred to it, and we expect before long that it will yield us a substantial dividend upon our interest in it. That company is erecting a new 80 stamp mill and cyanide plant, which should be at work early in the year simultaneously with our own new plant. As regards the third portion of the property, your directors realised how impracticable it would be for them to adequately explore and prospect this large area of over 5000 acres. They, therefore, sold this land to a company called the Van Ryn North. That company has already discovered a 3 foot reef on their property of small value, it is true, so far, but from our knowledge of the ground we think that this discovery is only the beginning to a satisfactory development of that property. The Van Ryn North have also valuable assets in their tree plantation, which is expected to yield a fair revenue, and I may also mention that indications that coal deposits exist on the property have recently been reported by the officials on the spot. Thus you will observe the two companies, the Van Ryn West and the Van Ryn North, have been formed each with a capital of 170,000 shares of £1 each, and have taken over the portions of our property shown on the map attached to the report. The purchase price paid to our company is 70,000 fully paid shares in each case. But as the Van Ryn North property is of such great potential value the agreement for sale to it embodied a clause stipulating that the Van Ryn Gold Mines Estate should have 25 per cent. of the profit realised on the sale of any portion of their land. We, therefore, hold 140,000 fully-paid shares in these two companies, which we consider form a very valuable asset. I have now to give you a short history of your company. During the past year we have raised into a healthy state two promising off-shoots. I think you will agree with my colleagues and myself that the operations at the mine since it was taken over by this company show a very satisfactory result. This is largely due to the very energetic direction of our local committee, and the thanks of the shareholders are due to them, and take especially to the Chairman, Dr. Magin, who has taken a great interest in the welfare of the company, and has personally supervised and directed operations. And now, gentlemen, I will go into the report and accounts in detail, and take the accounts in the order in which they appear in the statement before you. A note appears on the credit side of these accounts to the effect that the property, mill, stamps, machinery, &c., stood on the books of the old company at £130,036 17s. 7d., against £87,965 9s. 10d. in our accounts. These figures will have to be adjusted by reason of sale to the Van Ryn West and the Van Ryn North. The matter is already under consideration by your directors, and by the time we meet you again we shall, in all probability, have come to a decision as to this.—Mine development. To this is debited, in the first instance, the cost of opening out the mine, and as the mine is worked, and ore raised, credit is taken for such ore at the average rate of cost of development. Thus on June 30, the balance was £10,535 11s. 11d.; since then, owing to increased rate of development which has created larger reserves of ore, this item has been further enlarged, and caused an additional lock up of our limited working capital. Permanent works, £4572 9s. 2d.; machinery and plant, £3685 9s. 2d.; buildings, £7559 16s. 3d.—are largely on account of the new milling and cyanide plant being erected. The building account is heavy, as we have had to replace buildings which have been sold to the Van Ryn West Company (Limited). Estate. £1673 7s. 4d. covers the expenditure on trees planted in the area reserved for that purpose. This area has been disposed of to the Van Ryn North Exploration and Mining Company (Limited), and the item will not again occur in our accounts. Now, if you will turn to the profit and loss account under the heading of general expenses in South Africa, you will find that the item reports, assays, surveys, &c., covers cost of surveying, &c., the entire property taken over from the old Estate and Gold Mining Company, and the adjustment of the boundaries of the area disposed of to the Van Ryn West Company and the Van Ryn North Company respectively. Some portion of the expenditure incurred for the latter company we shall probably have refunded.—Bank charges, exchange, &c. Exchange for remittances to South Africa has been very heavily against remitters, which explains this large item. There is also a charge for interest. The banking account as taken over by us was considerably overdrawn and remained so until we were in a position to adjust it. Shortly after the directors took office. Stores unaccounted for, £3541 14s. This item has arisen through the imperfect system of keeping accounts that had obtained at the mine. The auditors recommend, and the directors concur, in the whole amount of the apparent deficiency being written off, but the account is being investigated, and your directors confidently hope that some explanation of part, at least, of the deficit will be forthcoming which will admit of a large portion of this amount being credited to profit and loss account for the current year. The system of accounts at the mine has been rearranged on a basis that will prevent a recurrence of such mistakes.—London office. Interest on debentures, £524 19s. 6d., is the interest on the debentures of the old company, which had to be made after reconstruction. Other items speak for themselves, and do not, I think, require comment from me. There is a note on the credit side of profit and loss account that "no credit is taken in these accounts for tailings on hand estimated at about 27,300 tons, nor for any profit resulting from the sales of property to the Van Ryn West Mining Company (Limited), and the Van Ryn North Exploration and Mining Company (Limited)." This is in reference to the 140,000 shares in the Van Ryn West and Van Ryn North. Before the reconstruction of the company a case was instituted against the old company by one Cooper, for the mining rights over 37 claims outside our mynpacht, which we have used for storing tailings. We have never regarded the claims as being of any mineral value, and have merely used them to store tailings upon. We are advised that judgment has been given in the Court on first instance against the company, but the local committee have decided to appeal. We, therefore, cannot say anything definite until this decision is heard. The report of the general manager at the mine, and the tables compiled by your secretary, which are attached to the directors' report, place shareholders in possession of every detail as to the position and cost of working the mine, and also the cost of milling and cyaniding. I do not see that I can with advantage enlarge on these reports and figures, but if any further explanation is desired I shall be glad to give it. You will see that during the period under review 51,571 tons of ore have been crushed, and 59,760 tons treated by cyanide. The average profit on the former was 13s. 6d. per ton, and on the latter 4s. 6d. per ton. This average profit will be higher when the new plant has got fairly to work. Development has proceeded at the rate of about 750 feet per month, which provided a reserve of ore on June 39 of 68,000 tons. But to provide for the necessities of the new mill, and a satisfactory reserve of ore in the future, the development has been increased to 1200 feet per month. By the time, therefore, that the mill requirements on the mines increase we hope to have a reserve of ore sufficient to meet any reasonable contingency. You have been informed that a new heavy 80 stamp mill is in course of erection at the mine, and also a new cyanide plant capable of treating 8000 tons of tailings monthly. The 50 stamps taken over from the old company are of light and obsolete type. This was known at the time, and in the scheme of reconstruction it was thought that having regard to the state of the mine, ample provision had been made in the erection of 50 new stamps. The development of the mine, however, having exceeded expectations, the board decided on the recommendation of their local committee and consulting engineer to at once order 80 stamps. These it is fully expected will be at work by or before March, 1896. Before reconstruction the old company had entered into an arrangement with a contractor to erect a cyanide plant and treat the company's tailings on the part-profit system. This has not been found to work satisfactorily, and as the present works are not capable of keeping pace with the new stamping power the board have, through their committee at Johannesburg, entered into a contract for the erection of a new plant, which it is expected will be ready for work simultaneously with the new stamps. The specification, &c., of the cyanide plant has been drawn up by the Rand Central Ore Reduction Company. That company has great experience in such works, and they will superintend the erection and also the working of the plant. To provide the money required for the extension referred to, we have made a proposal in our report to the shareholders, and it will be my duty later to put it to you as a resolution in terms of clause 12 of the Articles of Association. The prospects of your mine, gentlemen, are most promising. (Hear, hear.) Whilst hesitating to make a forecast of the future, I think I am fully justified in saying that your new stamps will crush at least 10,000 tons of ore monthly, and that the cyanide plant can treat 8000 tons monthly, and should show a handsome profit. We are advised that, at this rate, the life of the mines on our property can be fairly put at the low estimate of from 30 to 50 years. (Applause.) You have been informed in the directors' report that the new plant is being so erected as to be capable of expansion at any time. Your directors hope, and fully believe, that with these extended works, they will be in a position to declare steady and satisfactory dividends; therefore, they have taken the responsibility of such additional outlay which they now ask you to confirm by passing the resolution to be proposed for providing the funds required. Before leaving the works in question, I wish to refer generally to two vexed problems with which we have been confronted in common with the other mines on the Rand. The first is the water supply. Fortunately, we are in a better position as

to this than some of our neighbours. At the outset of our operations we had taken precautions, and, therefore, although we cannot say we have been unconcerned at the drought, our works have not been affected, and we have all through carried on operations uninterruptedly. We are now increasing the size of our dams in view of the erection of our new plant, and to provide, as far as possible, against any recurrence of a short water supply. The second point is that of native labour. This is not one that your board can provide against so easily. It will have to be dealt with by the mine managers and Chamber of Mines in South Africa. Whether it will result in a higher rate of wage to the native, or to the increased use of white labour and machinery, cannot at present be foretold. This difficulty will be only temporary, and you may depend upon your management minimising any inconvenience on this score. I have one more important point—viz., increase of capital. From some of our friends we hear of criticisms on a scheme to increase the capital of the company, and while we are always glad to learn their ideas, I wish for their information to explain the true reason of the increase. The facts are that we do actually need more money at once for the extension of our plant, and we must release the profits absorbed in the capital expenditure fund. The directors feel they are fully justified in distributing the profit actually earned at the mine, for it must be remembered that the company has a large holding in the Van Ryn North and Van Ryn West Companies, and the 70,000 shares we hold in the Van Ryn West Company will be returning to us a profit next year over and above that realised from our own mines, which also should increase largely. The interim dividend of 4s. per share, or 20 per cent., declared by the board is payable to all shareholders on the register at December 31 on January 15 next. The proposal is to increase the capital of the company from £160,000 to £200,000, by the creation of 40,000 shares of £1 each. The report explains to you that it is intended to arrange now for the issue of only 20,000 of these shares, but your directors think that while they are about it permission had better be taken for the larger increase. The 10,000 shares to be offered at once to the shareholders, viz.—1 share for every 16 shares held will meet our immediate requirements, and the option for 12 months to the guarantors of 10,000 shares at £6 per share will provide funds for further development. When negotiations were first opened and the terms of the guarantee practically settled, the price of Van Ryn Gold Mines Estate Company shares on the market was £6 5s., but although they fell considerably before the agreement was signed, and are still below the figure named in it, the guarantors have stood by their bargain, and we cannot but hope that the shareholders will fully appreciate how the company benefits by the transaction the board have entered into. As there are no directors or auditors to be elected at this meeting, I will formally put the following resolution, but before taking your vote, I shall be happy to answer any question which the shareholders may desire to put to me. The Chairman concluded by moving:—"That the report and statement of accounts submitted to this meeting be and the same are hereby received and adopted."

Mr. Van Ryn, who was received with applause, in seconding the motion, said: Gentlemen—With the lengthy report before you, and also the Chairman's full explanation, there remains little for me to say; but, as my name is so well-known in connection with the company, and being a large shareholder, you will no doubt like to hear from me about the dividend declared, future profits, and why an increase of capital is needed. The interim dividend of 20 per cent. declared, equal to £32,000, is made on mining only; no credit is taken for last year's business in floating part of your property. This profit should have been considerably more if we had had the mill nearer the mine, because it would have saved transporting the ore, and also enabled the manager to have better supervision over milling operations. The 50 stamps we have been working with have been sometime out of repair, causing expense and delay. The cyanide plant having been supplied, under contract, before the reconstruction, your company has derived only 2s. 3d. of the profits, 1s. 3d. going to the contractors. Taking these difficulties into consideration, the profits are reasonable, and I congratulate you that we are enabled to declare our first dividend. With regard to future profits, when the new 80 stamp mill starts working, we ought to mill about 10,000 tons monthly, and Dr. Magin, the Chairman of the local board at Johannesburg, who attended our board meeting in London the other day, was asked what the profits per ton would be when the 80 stamps were at work, and his reply was that we should get a profit of about 20s. per ton. I myself consider 20s. profit a ton not too much if we take into consideration the high assays we are receiving from the mine, improved milling power, with less expense for transport, better supervision, the mill being close to manager's house, full profits on tailings, as these will be treated direct from the mill, saving labour. Crushing 10,000 tons a month would then mean £10,000 profit a month, or £120,000 a year on a capital of £180,000 if the 10,000 option shares are taken. Besides these profits we have the large interest in the Van Ryn West Company, and as that company will mill in a few months, our profits will proportionately increase. Now, with regard to the labour question, if we have to work more with steam than with hand labour, we have the advantage of having coal at half the price other companies on the west of the Rand have to pay. The price of coal is an important item in mining on a large scale; we have good coal delivered to us at the works at less than 10s. per ton.—Increase of capital: There is a difference of opinion. Many shareholders would prefer waiting, but there are also several shareholders who have been asking for a dividend; and as the capital of the company is small, considering the assets we hold, I agree with the board that it would be better to accept the offer of 10,000 shares at £6, which enables your board to pay the earned profits, and the money realised for the 10,000 shares will pay for all new machinery. The 10,000 shares under option at £6 will, when the option is exercised, furnish the company with £60,000 in hand, and by that time we hope that the mine will be sufficiently developed to order another 40 stamps to earn still larger profits. I now beg to second the adoption of the report and accounts. (Cheers.)

The resolution was then put and unanimously carried.

The Chairman then moved:—"That the capital of the company be increased from £160,000 to £200,000 by the creation of an additional £40,000 shares of £1 each."

Mr. John Seear seconded the motion, which was carried unanimously, and a vote of thanks to the Chairman terminated the proceedings.

Whitaker's Almanack, 1896.—We beg to acknowledge receipt of a copy of this well-known review for the coming year. Any detailed description of its contents is now superfluous, as the review has now become a household word. We can only say that the volume before us sustains, in its complete and up-to-date information, its past reputation. An important feature in the new edition is an article, illustrated with maps, on "Boundary Treaties and Territorial Changes," a subject which is at the present moment of absorbing interest. The issue of the report on Secondary Education has necessitated some account of this most important subject, whilst the article on the British Empire, dealt with from its geographical and commercial standpoint, should also prove of great interest. Among other subjects which receive special consideration are the dockyards of the Empire, and the qualifications of Parliamentary and other electors. Owing to the success of the Japanese, an article has been contributed giving a *résumé* of her actual position at the present moment. The Navy List has also been revised, and now includes every ship in Her Majesty's service, whether in commission or not.

Alaska's gold output for 1895 is estimated by Mr. G. H. Swinehart, editor of the *Alaska Mining Record*, of Juneau, to be $3,000,000. Of this amount fully $800,000 has been obtained from placer mining alone, chiefly along the Yukon river. Mr. Swinehart says there are 15 mills, with a total capacity of 500 stamps in operation.

TRANSVAAL LANDS COMPANY, LIMITED.

An ordinary general meeting of shareholders in the Transvaal Lands Company (Limited) was held on Monday, at the Cannon-street Hotel, E.C., Sir Frederick Young, K.C.M.G., in the chair.

The Secretary (Mr. A. W. Heron-Maxwell) read the notice convening the meeting.

The Chairman said: Gentlemen—The first items in the balance-sheet, enumerated under the head of "Expenses in London," including salaries, office expenses, directors' fees, and general charges, amount to £1137 12s. 11d., and, as compared with the previous year, show a saving of a little under £88. The company has recently removed its offices, whereby a further decrease under this head will be obtained. The next item, under the heading of "Expenses in the Transvaal," amount to £1172 6s. 1d., compared with £1145 13s. in the previous year, the small increase being entirely under the head of general charges, a fluctuating expenditure, but one which has very largely decreased within the last three years. In connection with this item, in future a very large decrease is likely to be shown. The expenses of management alone have been reduced, as from November 1 this year, from £1000 to £500 per annum, a very important saving, which will go some way towards converting a debit into a credit balance in the current year. The next item, "Transvaal Government charges," includes general survey and farm taxes, and is reduced from £412 17s. 10d. last year to £269 3s. 3d. in the present account, a decrease of over £140. Under the head of Davidskuil, while a profit, amounting to nearly £700, has been made on the sale of goods and the increase of live stock, this profit has been more than absorbed by the expenses, the result being a loss of £371 10s. 1d. In connection with the expenditure under this head, a large portion of it is made up of fixed charges. These obligations were assumed by the late manager some years ago, and have not entirely terminated at the present moment, but the last of the old agreements will terminate in about three months. In connection with this expenditure, Mr. Meintjes, the company's representative in Pretoria, reporting upon the operations for the past year, says:—

> I think we can show that the company's future prospects are brighter now than they have ever been, and that we have seen the last of these losses. I have every reason to believe that the next report will show a marked difference, and not only do we expect a profit attained on a sound business basis, but to see the working expenses, which during the past year were gradually reduced, still further curtailed.

He further adds:—

> If reference is made to the past year's expenditure, it will be found that the working expenses of the various branches, exclusive of Pretoria office, amount to more than £1500; this expenditure, I may parenthetically remark, compares very favourably with that under the previous management, and it is now proposed to diminish it in the following manner:—We propose appointing Mr Neill the sole responsible manager of the company's operations outside Pretoria, and to place all the company's live stock, the Davidskuil store, farm, and bacon business under his charge, at a working cost of £550 per annum. I have gone carefully through the matter with Mr. Neill, who has written to me giving the above amount as his estimate of working expenses, and adding that he is quite confident it can be done at that figure. Mr. Neill is to get no share in the profits, but it has been personally agreed between us that after he has had the sole management for 12 months, and is in a position to make us at least self-supporting, his salary will be increased. At present this need not be considered, as Mr. Neill is perfectly satisfied with present arrangements. Mr. Neill, I may further mention, supplied me with figures showing that he calculates, when in full working order, to show a profit of about £1200 per annum. Mr. Neill will also undertake the letting of the farms in Waterburg, or placing of farmers on them to cultivate the lands and to look after the farms.

The result of the Cream of Tartar Fontein ranch is eminently satisfactory as compared with that of last year, showing an adverse balance of only £55 11s. 11d., as against £834 11s. 2d. in the previous year's account. Since the report was issued we have received information that the total number of cattle on the farm is 955 head, and that they are all healthy and in good condition. On the credit side, interest realised is £142 8s., as against £104 12s. in the preceding year. The transfer fees amounted to £110 15s., as against £61 5s. Profits on investments realised amounted to £455 16s. 6d., an item which did not appear in last year's accounts. Commissions amounted to £2371 12s.—an amount received in connection with the flotation of the Transvaal Exploring Company (Limited), to which I intend to refer at greater length later. It will thus be seen that the receipts in London amounted to £3080 11s. 6d., the highest sum recorded since the formation of this company, and it appears to us probable that the amounts to be credited in the accounts for the current year under this heading are likely to be considerably larger. The receipts in the Transvaal, which comprise rents, amount to £48 17s., as compared with £16 1s.—a satisfactory increase—and there is likely to be a still larger increase in this item, owing to a large number of Kaffirs having located themselves upon two or three of the company's farms in the Potchefstroom and Lydenburg districts, from whom the hut tax is now in course of being collected. The operations at Davidskuil are not as satisfactory as in the previous year, but they are, nevertheless, on the right side, and we look for an improvement in this quarter under the new arrangement already referred to. This brings me to the balance to the debit of the profit and loss account, and though it would have given unbounded satisfaction to the directors if they could have shown a credit of £726 9s. 3d., instead of a debit of that amount, it is still with great satisfaction that they are able to lay the accounts before you, and show such a large reduction as compared with previous years. As far back as 1891 the debit balance stood at £8221, and this was steadily reduced to £3226 in the period ending June 30, 1894. It is now still further reduced to the item of £725 9s. 3d., and, personally, and I am sure I speak also on behalf of all my colleagues, there appears to be the most ample reason for believing that when we meet you next year we shall be in a position to show a credit balance. With regard to the balance-sheet, the live stock goods, buildings, &c., show a decrease of about £500, the investments are taken at cost at £2200, and may be fairly taken as worth the full amount for which they appear in the accounts. The loan fully secured, the sundry debtors, the cash at the bankers' and in hand, are all good assets, and amount, with the investments, to £8067, against which there are sundry creditors upon the other side of the account for £1258 12s. 5d. The company is in the position of having a net amount available for its operations of £6800 odd, and in view of the fact that the operations of the company in the future are likely to be conducted at a profit, the directors are satisfied that the financial condition of the company is perfectly sound. In the directors' report we refer to the arrangement that has been made for the prospecting of the company's properties. For some two or three years past the shareholders have intimated to the directors that they would view with disfavour any arrangement for prospecting the properties of the company, which would involve the expenditure of any of the company's funds, and the reason was obvious, for, had we launched out in this direction, it would have been necessary that a further call should have been made upon the partly-paid shares. The directors felt that this did not debar them from entering into an arrangement with third parties for the prospecting of the properties, and at the last annual meeting I promised, on the part of the board, that some steps should be taken to this effect. I am glad to announce that the directors have entered into an arrangement by which their pledge has been fully redeemed, and which they have every reason to believe will turn out eminently satisfactory to this company. The Transvaal Exploring Company, which has undertaken the prospecting of our farms has, at their own expense, sent out two expeditions, and they are vigorously prospecting the company's farms in the Potchefstroom and Lydenburg districts. That company is amply supplied with working capital, and, I venture to think, a most energetic staff, and, while it does not confine its operations entirely to the lands of this company, it is within my own knowledge that the greatest amount of attention is being bestowed upon our farms. Not only are the mere operations of prospecting being conducted in a most efficient manner, but detailed reports are being made by that company's representative upon all this company's farms, detailing the geological formation and general characteristics, with plans attached and descriptions of the beacons, and it is almost needless for me to say that in the friendly relationship existing between the two companies this information is always available to us. The reports received upon the farms in the Potchefstroom district have been sufficiently encouraging to warrant the purchase by the Transvaal Exploring Company of diamond drills for the purpose of proving at depth the mineral value of the reef formation already discovered. Other parties are securing the mineral rights of adjoining farms, which is evidence of faith in the formation. As regards our farms in the Lydenburg district, the rights acquired by the Transvaal Exploring Company have been transferred to the Lydenburg Minerals Exploring Company (Limited), in which we have received 7000 fully-paid shares and £500 in cash. Prospecting operations are being actively pushed forward by that company, and under date October 16 the prospector reported that he had discovered several reefs on "Antioch," and under later dates he had sunk a shaft 20 feet deep, showing nothing but pyrites. He also reported having started another shaft on the same reef, as it was very good looking ore. With reference to the pyrites referred to, Mr. R. T. N. James, a very old and successful prospector in the Lydenburg district, under whose instructions these operations are being carried on, writes to the company's representative in Pretoria:—"I have written him (the prospector) requesting that he will send a few samples of quartz to Lydenburg for assay. As you are aware, many of the reefs in that part of the country are very refractory, and rich gold is often found payable in pyritic rock. I think it advisable to have an assay made. This I will attend to when next in Lydenburg." The company has acquired an interest in some new claims pegged out on Government ground in the Lydenburg district, and from the last reports we have received the board have every reason to expect that they will prove to be very valuable to the company. The railway from Pretoria, through the Waterburg district, has at last been sanctioned; and when it is completed, which it will be within the next two years, it will be of great importance to this company, as it affects a large number of our farms, and must considerably increase their value. I beg to conclude by moving that the report and accounts be received and adopted.

Mr. Edward Dicey seconded the resolution.

In reply to questions on matters of detail,

The Chairman said that there would be a reduction of expenditure during the ensuing year, in consequence of the change of offices. The bacon industry was a very important one, and a considerable profit was anticipated for next year. He did not consider that there had been any depreciation in connection with the company's farms; on the contrary, in his opinion, their value had increased, and the construction of the railway would further enhance it, for there would be a much greater demand for the farms.

The report and accounts were then adopted.

The retiring director, Mr. H. W. Thompson, was then re-elected, and the auditors, Messrs. Broads, Paterson, and Co., were re-appointed, and the proceedings terminated with a vote of thanks to the Chairman and directors.

AUSTRALASIAN MINING COMPANY, LIMITED.

The ordinary general meeting of the shareholders of the Australasian Mining Company (Limited) was held on Tuesday, at the City Terminus Hotel, Mr. Henry Weld-Blundell in the chair.

The Secretary (Mr. John Garland) read the notice convening the meeting.

The Chairman said: Gentlemen—It will be within your recollection, probably, that when we met you in November of last year, the directors obtained the sanction of the shareholders to the purchase of a property in the Gympie field of Queensland, which was known before that time under the name of No. 2 North Smithfield. Immediately after the meeting we transmitted to Queensland the £6000, which was the purchase consideration, and we gave instructions to our local directors to take possession of the property, and your excellent mine manager, Mr. John James, took steps to commence operations for sinking the shaft for the mine. It will also be doubtless, in your recollection, that there was every evidence at the time of our purchase, both in consequence of the developments which had taken place, and were being carried on in the neighbouring properties lying to the north and south of the new property, and from the investigations made by your local director's experts, that two strong master lodes penetrated through the centre of this new property of ours—two reefs known as the Smithfield and the Columbia. There was every anticipation that when the shafts were sunk deep enough—one to 600 feet and another to 1000 or 1100 feet—there was every reason to suppose that these reefs, as they passed through the ground, would contain good payable gold. As the depth of the new shaft would probably be 1200 feet, and perhaps 1500 feet, we thought it desirable that a strong and good shaft should be sunk, in order that they might deal with large quantities of ore. We accordingly started the construction of a large three-chamber shaft, and equipped it with powerful winding machinery. We also, subsequently, sent out air compressors and rock drills for the purpose of sinking as rapidly as possible. All the calculations that have been made, the estimates formed of the character of the reef, have since been completely verified by the development upon the neighbouring mines—the Smithfield and the Phœnix Golden Pile—to which reference is made in our report. These mines struck the slate bed, as anticipated, at a depth of 600 feet, and subsequently within the last month or two the Smithfield reef was struck. This reef is from 1 to 2 feet wide, and shows strong, coarse gold. The position of this company is, therefore, very materially improved, and interests in shares of mines lying to the north and south of our company are also enhanced very materially in value. From the latest accounts, we hear that our shaft has been sunk to a depth of nearly 600 feet, and doubtless by this time it is somewhat deeper. Our anticipation is that almost at any time we may receive a cable from Queensland stating that we have penetrated the slate bed. Our mining manager reports to us that we have a strong slate bed, and it will be necessary to crosscut eastward 100 feet in order to strike the Smithfield reef. The Columbia reef lies somewhat further to the east. I think, therefore, we may be congratulated in having found that during the past 12 months the estimate formed out there of the position of our mine is very much improved; and I hope that before very long we shall be in a position to show considerable development, and a return to our former prosperity. You will doubtless remember that about 18 months ago we were investigating and prospecting upon certain claims that we had obtained the option of in the colony of Victoria, in the Ovens district. These developments were showing pretty fair, and were sufficient to encourage us in continuing upon them for some few months, but in October of last year we got the opportunity of purchasing this property in Gympie. After due consideration we thought it best to recommend you to purchase the Gympie property, and this we eventually did. The last meeting having decided to purchase the property in Queensland, we intended at that time to abandon the further prospecting in the Ovens district, but soon after the meeting was held we found, before anything definite could be carried out, that the prospects upon these claims had very materially improved—improved so considerably that we felt it would be a folly to throw away such an opportunity of getting such a valuable property, even though we had not got at our own hand sufficient to develop the two properties. Knowing that we could float a company which would be beneficial to us as shareholders, we resolved to continue on a little longer, the result being our determination to close with the option to purchase the property and float a small subsidiary company to take over this property from us. This was accordingly done. We floated a small company called the Crescent Gold Company, and sold to them our two options—at that time they had become actually our property—the Crescent and the Orlando leases. These were sold to the Crescent Gold Company for a certain amount in cash—about £1500 in cash—a sum sufficient to cover the greater part of our exploratory and development work, and the cost also of bringing out the company, and we retained a substan-

tial interest in the venture in the shape of 2500 shares in the new company. These, in proportion of shares, would represent one-eighth of the entire interest in the Crescent Company, which we intended to float with a capital of £20,000. We decided, as the mine was actually our own property, to offer the shares to the shareholders in the Australasian Company. This we accordingly did, and with the most excellent results. The large bulk was taken up by the shareholders themselves, and only a small portion which was left was duly allotted to persons outside the company. I am happy to say that developments upon this Crescent Gold Mining property have progressed exceedingly well. We started development in the early part of this year—at all events, in April or May. We started on a large scale, in order to develop the mine in a workmanlike manner, and, I am happy to say, with promising results. The cost of mining and milling will, in all probability, be exceedingly small. The mines are situated at an elevation above the river Ovens, enabling us thereby not only to mine at a low cost, but also to convey the material to our mine side at a very low rate. We have an abundant water supply by striking the river at a higher level on the Ovens river, and thus we can have our machinery driven by water power. This means that we will be able to carry out our milling and crushing at very low cost. In the last week or 10 days we received the following cablegram regarding the Crescent property, which will, no doubt, be of interest to you:—"Mill test on ores from Crescent, 13 tons, 34 ounces; Victory, 12 tons, 67 ounces—on deep working Victory developing a fine ore body. There is a shoot of paying rock about 75 feet long; average width, 2 feet 6 inches; estimated value 2 ounces 10 dwts. per ton. Have begun to erect new mill." This is exceedingly satisfactory, as it shows that 25 tons have yielded 101 ounces, a very handsome return indeed. I do not think I can say anything more in regard to the mine operations. You know our position now, that we are developing as fast as we can, and we hope that within six months we shall have substantial results. On the other hand, you have a substantial interest in the Cresent Mine amounting to one-eighth, a property which, we anticipate, will begin to pay dividends very shortly. Passing on to deal with the accounts, the Chairman said that the balance over profit and loss account carried forward at June 30, 1894, was £2489, and this had been reduced by £1731, leaving the balance now at £917. He hoped they would very soon find that this would be very materially altered. He begged to move the adoption of the report and accounts.

Mr. F. Meadows Taylor seconded the motion.

A Shareholder enquired whether the money due from the Crescent Gold Mining Company had yet been paid. If it had not, he considered that the company might fairly claim interest on the amount?

The Chairman replied that the money had not yet been paid over, nor had the 2500 shares actually been transferred to the company. The delay, however, was only due to the necessity of complying with certain formalities as to the transfer, and also to the dilatoriness of the authorities in the colony. The Crescent Company could not, therefore, be fairly asked to pay interest on the amount.

Mr. Macmillan asked whether there was no liability in regard to the capital of the company on account of the Gympie Great Eastern property having been sold?

The Chairman replied in the negative, and said that the reefs on that property were completely worked out, and the profits distributed amongst the shareholders. The mine was subsequently let to tributers, but when they failed to make it pay the ground, from a mining point of view, was worth absolutely nothing. It was worth something, however, to a neighbouring mine for purposes of ventilation, and was sold to them for a few hundred pounds.

A Shareholder gathered from the remarks of the Chairman that the mine in six or eight months would be in a position to make substantial returns, and he wished to know how the company's prospects in that direction were affected by the reef being struck at 213 feet east of the shaft in the Phœnix Golden Pile Mine.

The Chairman, in reply, said that it was only the slate bed which would be struck at 600 feet, and when they got into that they would have to drive eastward in order to strike the reef itself. Continuing, he said that probably it would be of interest to shareholders to have the figures and details as to the result of the crushings during the whole of the period the old Gympie Mine was open, and that was to say from the year 1887. The crushings amounted to 43,625 tons of quartz, and the yield of that was 67,170 ounces 8 dwts. 10 grains. The yield of that in bullion again, in gold and silver, was £236,709 7s. 2d., or very nearly a quarter of a million. The average value of the quartz per ton was 1 ounce 10 dwts. 19 grains, and the average price obtained for the gold £3 10s. 7d. per ounce. The total net profits amounted to £147,285 17s. 6d.—really a very considerable sum. Added to that was £12,719, which was the original sum which belonged to the company at its inception. Of this whole, £160,000, there was distributed among the shareholders £139,125, leaving £20,000 or £21,000 to start fresh operations in the colony of Queensland by the purchase of this Smithfield property.

A Shareholder asked if it was fully expected that the directors would be able to give them returns in six or eight months?

The Chairman said the slate bed would be struck at 630 feet, and when they got into the slate bed they would get into the area of the gold.

The report was then agreed to.

The Chairman here intimated that all the directors resigned at this meeting, but were eligible for re-election.

Mr. James Morrish moved that Mr. Henry Weld-Blundell, Mr. Alfred Romilly, and Mr. P. Meadows Taylor be re-elected directors.

Mr. Boydell seconded the motion, which was carried.

Messrs. Cooper Brothers and Co. were reappointed auditors.

A vote of thanks to the Chairman terminated the proceedings.

SOUTH HALKYN AND RHYDYMWYN MINING COMPANY.

The fifth annual general meeting of the South Halkyn and Rhydymwyn Mining Company was held at Chester, on Monday, Mr. St. John Charlton presiding.—The directors in their report said work had been proceeding steadily in Tyddyn-y-gywnt during the past year, and the driving northward had reached a length of 408 yards. They were now passing through a ravine into Mr. Scott Bankes' land, whose minerals they had arranged for, and it was near this ravine that the lode they had been driving for was expected. The driving on the Pen-yr-orsedd lode had been suspended, as the character of the ground did not prove as promising as had been hoped. Considerable progress had been made in opening out and driving a level east and west of the western iron shaft, or Brynoelyn lode, and also in intercepting the enormous volumes of water coming out of the gravel above, and diverting them into the drainage tunnel, thereby relieving the lower workings of much that rendered it difficult for the old Rhydymwyn Company to contend with. A little lead had been found in the sides of the drivings, and the debris found was being dressed ready for market. A very rich lode has been struck by the North Hendre Company while sinking a shaft at Olwyn Goch, which as it ran through the company's property was of great interest and value. The directors proposed to take immediate steps to sink upon and prove the lode.—Messrs. John Watkinson and John Briscoe were re-elected directors, and Colonel Howard was elected a director in the place of Mr. C. B. Phillips.—The meeting approved of the proposal to sink upon the Hendre lode.

FURTHER MEETING REPORTS WILL BE SEEN ON PAGE 1548.

The Prospectors' Association (Limited), 1, St. Helen's Place, London, E.C., gives notice that the transfer books will be closed from Friday the 20, until Thursday the 26th inst., both days inclusive, in order to prepare the dividend recently declared.

GEOLOGY OF CRIPPLE CREEK.

By Whitman Cross, Geologist.

THE central portion of the area is a typical volcanic complex. It consists of predominant fragmental materials—tuff and breccia—with numerous dykes and irregular intrusive bodies of massive rocks. This part is naturally the most complicated and interesting geologically, and it is also of the greatest economic importance, because the gold deposits are there most numerous.

Surrounding this central area is granite, the principal rock, penetrated by dykes of certain of the volcanic rocks. Remnants of tuff and breccia also occur, and there are a few subordinate formations which are not directly connected in the origin with the volcanic centre. The High Park Lake beds and the associated rhyolite of Grouse Mountain are the principal of these formations.

The study of the district has led to the conclusion that there was once a true volcano at this centre of eruption. It was probably small in comparison with the one west of it, but it exhibited a very complete cycle of phenomena characteristic of volcanic vents. Owing to the extreme decomposition suffered by many of the rocks under the action of gases and thermal waters, many features are at first difficult of recognition.

The coarse-grained granite of the Pike's Peak type prevails in this district, except to the west of Cripple Creek, where a finer-grained type occurs. Fine red granite dykes abound throughout the granite area, and coarse pegmatite dykes are occasionally found. Gneissic structure is locally developed in the granites, but neither this structural change nor the distribution of the granitic varieties could be shown on the map, owing to the limited time available for the investigation.

The numerous small areas designated schist are not so clearly metamorphosed Algonkian strata as are many in the adjoining district to the west, but they are plainly included masses in the granite, and hence to be considered older than the rock. Most of these schistose rocks are silvery muscovite-quartz schists, with fibrolite in many cases. Some are doubtless altered gneisses, while others are metamorphosed Algonkian sedimentary rocks. Those near the volcanic area are much kaolinised. Small granitic veins or dykes penetrate the schist.

Several diabase dykes in granite are shown. They are all small and short, and are numerous only near Cripple Creek town and in Brind Mountain. These are probably of Algonkian age, belonging to a series of wide distribution in the Front range, and not with the rocks of the volcano. Augite is commonly changed to uralitic hornblende in these dykes.

The andesite, though not very different in character, are of two principal epochs of eruption. The more important type is an augite hornblende-andesite, with some mica. It is probably the earliest massive rock of the volcano, and the small areas of Battle and Big Bull Mountains are regarded as representing a large body which has been in great degree destroyed by explosive outbursts or covered by the tuff and breccia of the eruption. This andesite is characterised by its large prismatic crystals of apatite, which are often larger than any other constituent of the rock.

The second andesitic variety occurs in dykes cutting the breccia, especially in Anaconda Ridge and Poverty Gulch. The rock is an augite-andesite, with some hornblende and mica, and has a denser groundmass than the earlier type. An andesite, rich in mica, occurs in dykes in Battle Mountain, but is not represented on the map.

The specially characteristic rock of the region is phonolite. It occurs in numerous narrow dykes, both within and without the main volcanic area, and is the only one of the volcanic type having such distribution. It also occurs in several isolated bodies capping granite hills or mountains for some miles on all sides of the centre, as in Trachyte, Big Bull, Cow and Nipple Mountains. These masses are thought to be remnants of large inclined dykes in granite, similar to those shown on the map in the territory just west of the volcanic centre. This origin is further suggested by the phonolite bodies of Grouse and Straub Mountains, which are clearly lateral intrusions into the High Park Lake beds near the granitic surface. No surface flows of phonolite are now indentifiable.

Phonolite was a product of several epochs of eruption, for a part of the breccia contains phonolite fragments, and this breccia is cut by phonolite dykes. The dykes are also of several epochs.

The phonolite consists of alkali feldspars, nepheline, sodalite, nosean, and pyroxene, which is in great part aegirine. Accessory minerals are sometimes present, the most notable ones being lovenite and a peculiar blue amphibole. The smaller dykes are dense, a greenish-grey colour, and have a pronounced fissile or schistose structure, due to the arrangement of the predominant scales or microlites of feldspar parallel to the dyke walls. A few glassy sanidine tablets give more or less distinct porphyritic structure to many masses. The phonolite of Grouse Mountain and of the smaller bodies is porphyritic through the unusual development of nepheline in numerous macroscopic, reddish crystals. Analcite occurs in drusy cavities in certain places.

The large mass of Bull Hill, and some smaller ones in or near Bull Cliff, belong to a rock closely allied to the ordinary phonolite, but deserving to be distinguished from it by the smaller amount of nepheline it contains and by its structure. There are many stout feldspar crystals in this rock, and it is not laminated. In its prevalent decomposed condition it bears little resemblance to the normal phonolite, though the fresh rocks of the two types are nearly identical in chemical composition. Sodalite and nosean are as abundant as in the other type.

A single mass of this rock occurs at the south base of Bull Hill. It possesses nearly the same chemical and mineralogical composition as the phonolite, but has less nepheline, sodalite and nosean, and a primary green hornblende is associated with the augite. The rock is pearl-gray in colour, with a fine-grained granual structure, excepting on the periphery, where it becomes porphyritic. The presence of this granular equivalent of phonolite in the heart of the volcanic district suggests more definitely than anything else the site of the actual vent of the volcano.

On the south-east shoulder of Gold Hill is a mass of augitic syenite-porphyry, with many small feldspar and augite crystals in a very coarse-grained feldspathic ground-mass. Little of the limesoda or plagioclase feldspar series is present. Nepheline, sodalite and nosean are wanting, but the strongly predominant alkali feldspars ally this rock with the phonolite series. Hornblende and mica are subordinate constituents.

The last eruption of the district produced a number of narrow dykes of dark basic rocks. These are usually very much decomposed, but from the few fresh occurrences it is plain that there are two distinct rock types among these dykes, one a nepheline-basalt, the other a normal feldspar basalt. The latter type is shown in fresh condition in the Wilson Mine, at Altman, and near the Dolly Varden Mine, in Squaw Guelch. The former occurs in numerous dykes in Battle Mountain and Raven Hill, being shown in nearly fresh condition in the Elkton-Raven dyke, and in the Black Diamond Mine, on Battle Mountain. The Moose, Ben Harrison, and Anna Lee dykes are of nepheline-basalt, very much decomposed, and locally impregnated with ore. Many other short dykes of Bull and Raven Hills belong to one or the other of these basaltic types.

In their decomposed state these dyke rocks are usually very soft, greenish in colour, and often show a straw-yellow mixture of decomposition products in place of the augite prisms of the original basalt. Only a few of the best exposed nepheline-basalt dykes are represented upon the map.

The fragmental rocks of the central volcanic area, which are cut by all of the massive rocks described except the earliest andesite, consist of small fragments of andesite, phonolite, and granite. The predominant constituent is andesite, with phonolite locally abundant and granite very subordinate, often confined to microscopic grains. In texture these rocks vary from fine, even-grained tuffs, composed of sand or gravel particles, to a breccia made up of small angular fragments, few over 1 inch in diameter. Very large fragments do not occur. The most abundant modification contains a few comparatively large fragments in a gravelly matrix, a form which may be called tuff-breccia.

The greater part of the tuff and breccia is without distinct bedded structure, but occasionally a bedding is visible. Owing to the extensive decomposition to which the rocks of the central area have been subjected the bleached and indurated tuffs are in many places distinguishable from massive rocks only by the closest scrutiny. Tuffs retaining in some degree their original dark colours and loose texture are found on the slopes of Bull Cliff and Battle and Big Bull Mountains, especially near the isolated patches of massive andesite, and in these places the fragments of the breccia can be seen to be identical in character with the massive rocks near by.

Granite occurs in the tuff-breccia most abundantly near the boundary line. Phonolite is prominent in the breccia of Anaconda Ridge, Raven Hill, and in the space between Battle Mountain and Bull Cliff.

In Grouse Mountain are isolated patches of a banded, pinkish or grayish rhyolite, associated with the High Park beds. This rhyolite contains crystal of sanidine, quartz, and biotite, in a dense ground mass which is sometimes microspherulitic, though usually criptocrystalline, with more or less pronounced fluidal structure. The rock is like that represented on the Pikes Peak sheet as widely scattered over the adjoining country north and west of Grouse Mountain, and there is no reason to believe that this rhyolite was a product of the Cripple Creek volcano.

In Grouse and Straub Mountains is a rudely bedded grit or coarse sandstone, composed of granite gravel with some worn pebbles of granitic and schistose rocks and a smaller number of pebbles of hard, bluish quartzite, derived from fragments of Algonkian quartzite included in granite, described in the text of the Pike's Peak sheet. The grits are reddish in colour, loosely consolidated, and resemble the Fountain formation (Carboniferous). On the right side of Grouse Mountain these grits locally rest upon rhyolite. This relationship is so similar to between the rhyolite and the lake beds of High Park, a few miles West of Grouse Mountain, that the grits of Straub and Grouse Mountains have been referred to that lake bed formation. Their thickness in Straub Mountain is 200 feet or more, though the unevenness of the granite floor makes an estimate difficult.

The phonolite mass of Grouse Mountain was literally intruded into the grits at a time when they must have had a much greater thickness than at present. The plane of intrusion was very irregular, as shown by the map, cutting in places down to the granite, and there lifting rhyolite and grit, while in other places one or both of these formations were left between granite and phonolite. The phonolite of Straub Mountain is likewise an intrusion into the grits.

The tuffs and breccias of the northern and eastern portions of the central volcanic area rest upon a surface of granite, whose topography must be quite as irregular as the surface of to-day. This is shown by the course of the boundary line of the volcanics, and by the islands of granite and schist which project through the tuff and breccia. The isolated areas of tuff in Mineral Hill and Rhyolite Mountain also illustrate this relation.

From near Anaconda to Victor the contact plane is so steep in several places as to suggest that actual vents of the volcano are directly adjacent, and other evidence points to the same conclusion. The granite near these steep contact planes, especially at Anaconda and on the ridge south of Arequa Gulch, is very much shattered in a most irregular manner, as well as traversed by the usual fissure systems. The granite island of Ironclad and Bull Hills is also very much broken up. A natural cause for this condition is to be found in the earthquake shocks attending the explosive eruptions of the volcano.

Many small bodies of massive volcano rock in the central area correspond in their shattered condition to the granite of the contact zone. This is illustrated in Battle Mountain, Raven Hill, and Bull Hill. Many dykes are so broken up that the mass is really a breccia, although the discoloration may have been slight. The shock which shattered the massive rock doubtless affected also the loose fragmental materials, and destroyed much of the bedded structure which may have existed in the tuff and breccia of the central area.

The andesite of Battle and Big Bull Mountains is certainly older than the tuffs which surround or overlie the patches now seen, for these tuffs are clearly made up largely of that same andesite type. The other massive rocks cut the fragmentals as dykes or necks, but are not shown in sufficiently numerous masses to determine with certainty the sequence in all cases. Phonolite appears to have been the only rock erupted in several periods.

The nepheline-syenite body sends off arms which cut one of the masses of the trachytic phonolite above the Legal Tender Mine. But all the rocks except the andesite and basalt are closely allied, being very rich in alkalies and poor in lime and magnesia, and constitute one group characterising the middle period of the volcano. The nepheline-syenite occurrence is of much importance as indicating that at the time of its intrusion the volcanic mountain was large enough to secure for this magma conditions of cooling suitable for the production of the granular structure. It is also probable that the mass lies within, or in close proximity to, the central conduit of the volcano.

The rocks of almost the entire mass of the central volcanic area, and of a large area adjoining on the north-west, are very much decomposed. The prevalent form of this decomposition is a bleaching by removal of iron-bearing minerals, and a kaolinisation or muscovitisation of the feldspathic constituents. It is reasonable to assume that both gaseous and aqueous agents were active in producing this decomposition, inasmuch as the phonolite, the principal rock of the volcano, contains flourine, chlorine, and sulphuric acid, and it is scarcely conceivable that the eruptions of phonolite magmas containing these elements were not followed by intervals of fumarole and solfatric action. The porous zones in granite adjoining the phonolite dykes, due to removal of quartz and mica, testify to the action of agents connected with the phonolite magmas.

An indirect chain of evidence indicates that the Cripple Creek volcano is of Miocene age, the late Eocene (Oligocene) Lake beds of Florissant are overlain by rhyolite seemingly identical with many other remnants, including those of High Park, and Grouse Mountain. As stated above, the phonolite of the latter locality is later than the rhyolite, and, by inference, the volcano is, in part, at least, younger than the Eocene, though there are no means of estimating the duration of the volcanic activity.—*Mining Industry and Review.*

REPORTS FROM THE MINES.

COLONIAL, INDIAN, AND FOREIGN.

AUSTRALIAN BROKEN HILL CONSOLS.—The mine manager reports by mail for the fortnight ended November 7, as follows:—Block 96, 280 feet level east prospecting drive No. 4 rise eastern stopes driven 15 feet. Stoping continued else no change. No. 5 rise stopes driven 6 feet. The lode not looking promising, work has been suspended here. No. 1 rise 280 level east driven 15 feet. Opened up stopes to eastward, the lode being the continuation of the shoot opened up in No. 2 rise, consisting of carbonate of iron containing pyrites and cobaltite No. 3 rise 280 level east driven 7 feet, total 27 feet; no change. Incline sunk 3 feet, total 604 feet. The lode here is dipping very fast yielding a little native silver and cobaltite. Started to explore the lode eastward before sinking any further. No. 6 level east driven 3 feet 6 inches, total 69 feet 6 inches. The lode here is well defined and looks promising. No. 5 level east driven 10 feet 6 inches, total 228 feet 6 inches; no change.—Diamond drill. Two bores have been put up from No. 1 winze; from here the drill was removed to inner stopes where two bores were put in and thence to the block west of winch plat, which has been bored through, and all without any results.—Note. The quantity of rock mined during this fortnight was 2346 cubic feet.

BAYLEY'S REWARD NO. 1 SOUTH.—Mining report, dated Coolgardie, October 28: Main shaft. The north drive at the 170 feet level is at present 66 feet from the shaft, lode being 20 inches wide, very favourable looking stone, but at present not exposing any gold, which doubtless will make again as we continue. 120 feet level has been advanced north a further distance of 6 feet, total being 95 feet from the shaft. Lode again meeting with a fault cutting it completely out, but I think from indications will shortly make again.—Stopes. Stopes at the back of the 120 feet continues without any particular change. Lode being 3 feet wide, in which gold in breaking is being seen.—Stone treated. Stone treated for the fortnight for the company is 62 tons, 18 tons of this being from the 170 feet level, the yield being 55 ounces.—(Signed) W. H. Matthews.

BAYLEY'S REWARD CLAIM.—Mining report dated Coolgardie, October 28: Have now almost got things completed for the sinking of Sylvester or main shaft, which will be resumed with the full number of men on the 30th inst.—South drive. In this the men have not been constantly employed, being required for other purposes, consequently has only been driven 3 feet, full length now being 238 feet from shaft. Lode formation continuing same as previously.—North drive. Have been stoping out quartz from the western side of the drive as it is my intention to have a trial crushing from this stone alone, and we wish to obtain what is a fair average. This is being passed through the battery with five stampers separated from the others for that purpose.—100 feet level. South stope continues about same size—4 feet—but still fair in quality.—North stope. A few fine colours of gold are at times being seen, but the quantity of stone now in this part of the mine is almost exhausted from the 100 feet level to the surface.—Begelhole shaft. But very little work has been done during the week, consequently there is very little change to report.—Air shaft. Stope being worked from the air shaft continues to yield slightly better stone than in other parts of the mine, but the quantity now to be raised is very limited.—Everard shaft. The timbering of Everard shaft has been completed, and will now commence driving south towards the air shaft at the bottom of 100 feet level, the lode being at this point from 4 to 5 feet wide of a favourable character.—Machinery. I am very pleased to report since the size of the driving wheel to the oil engine has been decreased, and the pump which has been fixed to cause a larger circulation of water through the water jacket has been completed, that the engine works very much better and during the last few days has given us no trouble, but has been working the 20 stamps very satisfactorily indeed, which I now hope will continue.—Water. During the fortnight we have had great trouble to procure water, having to send men to get small quantities from different shafts wherever it could be obtained. Not wishing to employ extra men I have to take them from the mine, which has delayed our underground works very much. After to-day or Wednesday I think the Consols will have their shaft completed and be again hauling water, but I have received notice that we are not to have it at the same price—2s. 6d. per 100. I have seen the manager, but cannot come to any understanding as to what extent it is to be increased, there being a new manager appointed for the Consols. The present one will not fix the price until he arrives, but the chances are in future we shall be charged from 4s. to 5s. per 100, which we can but ill afford to pay under present circumstances.—Yield. During the fortnight there has been crushed 209 tons for 197 ounces of gold. This is better than the last, but still far from satisfactory considering the expense, which with shaft sinking and other prospecting work will be heavy.—(Signed) W. H. Matthews.

BREMNAES.—The directors have received the following report from Mr. Daw, jun., dated Haugesund, December 12: In the Risvig Mine we see no alteration to report. We have crushed 82 tons of quartz sorted from the different workings, with result 25 ounces of gold were obtained, equal to 6¼ dwts. to the ton.—Gapleokog Mine. All the workings bar level south show a slight increase in the width of the quartz, and during the week we have broken several stones showing coarse gold, samples of which we send to you. We have also crushed from the stopes 42 tons of quartz, which gave 17 ounces of gold, or a little over 8 dwts. to the ton. In Fandenæs Mine the lode in the cutting looks remarkably well. The quartz is 30 inches wide well mineralised, and shows gold. We are sending to the office some stones found in this lode. We estimate their value at about 8 ounces gold. From the alluvial washings we have panned about 4 ounces. You will see from the above and our previous reports that the mines, especially the latter two, are looking remarkably well, and we hope soon to have the pleasure of sending you the result from a more substantial crushing.

BALAGHAT MYSORE.—Thomas Richards, November 28: Report for the fortnight ending November 23:—Ogle's shaft. The 270 feet level south has been driven 17 feet 3 inches, making a total distance of 258 feet from the crosscut. At 244 feet from the crosscut the dyke was got through, thus proving it 15 feet in width. Beyond this the drivage has followed the course of the lode which in the immediate vicinity of the dyke was only 3 inches wide, but has opened out to a width of 10 inches in the present forebreast of an assay value of 3 dwts. 18 grains.—Cyanide works. The erection of these works is progressing satisfactorily.

CRESCENT GOLD.—Superintendent's report for fortnight ending Nov. 8: Crescent Mine. South tunnel towards main shoot advanced 18 feet, total 269 feet. This tunnel is now in the lode formation, which consists of slate and sandstone with innumerable quartz veinlets, latter being highly mineralised but non-auriferous. We intend to extend the tunnel to the hanging-wall and then to drive north towards the main shoot. Rise on main shoot at back of drive south of Richardson old tunnel advanced 12 feet, total 34 feet. The rise has been suspended as the stone has become poor. The winze immediately under the above-mentioned rise on main shoot sunk 5 feet, and producing excellent stone valued at 3 ounces per ton over a width of about 2 feet. A test parcel of about 10 tons of this stone is now being sent to the Harrietville's Company's mill. Crossout west of drive south of Richardson's old tunnel extended 22 feet, total 81 feet. Occasional colours of gold are being met with. Shaft on north shoot sunk 13 feet. There is a vein here about 8 inches wide, which is valued at 2 ounces of gold per ton.—Victory Mine. Rise at back of deep tunnel advanced 22 feet, communicating with winze below upper tunnel. The auriferous portion of lode here is about 8 inches wide. This is producing excellent stone, of which a trial crushing of 10 or 12 tons is now being sent to the Harrietville Company's mill.—Orlando Mine. Deep tunnel advanced 14 feet, total 117 feet. Passed through a quartz lode 1 foot wide which carries colours of gold and will be further developed later on.

HANNAN'S STAR.—The mine superintendent reports for the month of October as under:—Main shaft. At 160 feet from the surface the western plat has been cut 8 feet by 8 feet high by 8 feet wide in the clear. A crosscut has been driven from the shaft at this point a distance of 24 feet through very hard diorite without any sign of the lode, which must have been turned back to the west. 100 feet of ladders have been made and fixed in position in this shaft, and a whip pole erected for drawing the debris to surface by horsepower. An ore paddock has also been made.—Underlay shaft. Ladders and skipway have been made and put down from surface to bottom, and everything got ready to carry on work when we shall have proved the lode in the main shaft.—West shaft. The eastern crosscut from this has been extended during the month 30 feet, making it a total length of 66 feet. The ground has been very favourable for driving. The last 18 feet has been in lode formation, and the footwall has not been reached. It consists of standstone, veins of ironstone and quartz, which is stronger underneath than at the back of crosscut, causing the belief that we are on the top of the formation. Pannings show that the whole of the ground carries a little gold, but not in payable quantities, and it is anticipated that when the footwall is reached there will be an improvement. The stone is very good looking. The formation is 30° north-west and is underlaying to the west 3 feet in 6. An ore paddock has been made, and a shed erected over the shaft to protect the men while working the windlass in the sun. The shaft itself has been cut down 20 feet, making it vertical 31 feet from brace.—General. There has been difficulty in carrying on work owing to the scarcity of competent miners.

HARRIETVILLE.—Superintendent's report for fortnight ending November 8: Shaft from surface on new lode at the Tiddledee Mine sunk 15 feet, total 35 feet. The lode is becoming small in the shaft although still valued at about 2 ounces of gold per ton. This contraction of lode was expected as we are sinking near the south end of shoot which is pitching north. Drive south of shaft at depth of 20 feet extended 12 feet. Lode (on account of pitch) pinched to a few inches but still carrying gold. This drive will be further extended as surface indications point to the existence of a second shoot a little further south. North drive at same level extended 30 feet. Lode in end 3 feet wide, and valued at 3 ounces of gold per ton.—Returns. From a second mill test of 60½ tons of stone, taken from the foregoing workings, we have obtained a return of 105 ounces 19 dwts. of gold. This is a most satisfactory result, as no attempt has been made to classify the stone. Tunnel E will be retimbered and made secure in about one week, when a contract will be let to extend this tunnel about 100 feet to intersect the new lode at a depth of 380 feet from the surface. A third mill test is now being made.

HEIDELBERG GOLD MINES.—The manager at the mines writing from Heidelberg under date of November 22, reports as follows:—No. 4 shaft. This shaft is now sunk a little over 100 feet from surface, and I am glad to say the reef measures about 3 feet wide and pans very well indeed. The reef in the bottom now has a most promising appearance and is, in fact, taking its size—viz., 3 feet into account, the best I have seen in any mine in the district, and this portion of the property is destined to open out a most valuable mine. I am glad you have decided to sink to a depth of 130 feet before commencing the levels, as at this depth the reef will probably prove of increased value and it will be practicable to stope the whole of this ground without any impediment, which I need not remark will yield a large body of ore.—No. 5 shaft. In accordance with your instructions of last week I have had men cutting trenches some 500 feet west of No 4 shaft in order to discover the reef, and to-day we have been fortunate enough to strike it a few feet below the surface. It is not very wide but it has a very promising appearance; and will no doubt increase both in size and value as we get deeper. This shaft will be commenced forthwith with some good men I have engaged, and if it proves of similar value to No. 4, and of this I have no doubt, we shall be able in the course of two or three months to lay open some thousands of tons of good quality milling ore.

KANGARILLA.—Report from manager at mine, dated November 12: Stoping goes on in block 10 in good ore. The assay of average ore for week ending 9th inst. gave 106 ounces 3 dwts. 8 grains silver. The lode seems, as I expected, to take a more horizontal course below No. 2 south level. I am also having a crosscut put in at the top of No. 6 winze to see if we have the full width of lode or if there are parallel lodes.

MYSORE REEFS (Kangundy).—Mine report for fortnight ending Nov. 27: Underlie shaft. This shaft has been sunk 8 feet 6 inches, now 38 feet 6 inches below the 425 feet level. The lode is 4 feet wide, 2 feet 6 inches is solid quartz. The quartz is worth 10 dwts. 12 grains of gold to the ton. The lode is showing good walls and has a most promising appearance for further improvement in value. 425 feet level north has been advanced 8 feet, now 84 feet 3 inches from shaft. The lode is 2 feet 6 inches wide composed of quartz and a little pyrites, assaying 1 ounce 6 dwts. 12 grains of gold to the ton. 425 south has been extended 11 feet 6 inches, now 62 feet 6 inches from shaft. Lode 2 feet 6 inches wide, composed of quartz, arsenical pyrites and schist, worth 8 dwts. of gold to the ton. Rise above the 425 feet level north has been put up 5 feet 6 inches, and communicated with the winze below the 325 feet level. Winze below the 325 feet has been sunk 5 feet 6 inches, and communicated with the rise above the 425 feet level. Stope below 325 feet level north of winze the quartz is 9 inches wide, assaying 1 ounce 8 dwts. of gold to the ton. Stope south of winze the quartz is 15 inches wide, assaying 13 dwts. 12 grains of gold to the ton. Stope in back 325 feet level the quartz is 2 feet wide, assaying 6 dwts. of gold to the ton. Vertical shaft has been sunk 4 feet 6 inches, now 283 feet 6 inches from surface. Stope in back 260 feet level the quartz is 1 foot 6 inches wide, and worth 6 dwts. 12 grains of gold to the ton. Stope in bottom 260 feet level the quartz is 2 feet wide, and worth 7 dwts. of gold to the ton. New north shaft has been sunk 3 feet, now 69 feet 6 inches from surface.

MAY CONSOLIDATED.—The directors submit the following report for the month of October: Battery. 80 stamps ran 30¾ days, crushed 11,000 tons. Gold won 3671·33 ounces (average 6·675 dwts per ton), valued at 72s. 6d. per ounce, £13,308 11s. 5d.—Cyanide works, MacArthur-Forrest process. 500 tons tailings treated, together with final clean up, yielded 633 ounces bullion, £2472 10s.—Siemens process. 5800 tons tailings treated. Bullion won 1300 ounces, equal to (say) 975 ounces fine gold (average 3·36 dwts. fine gold per ton), at 80s. per ounce, £3900. Other receipts, £43. Total, £18,724 1s. 5d.—Working cost. Mining 11,000 tons cost £6610 2s. 9d., equal 12s. 0·221d. per ton. Development 11,000 tons cost £1740 0s. 11d., equal 3s. 1·956d per ton Total, £8350 3s. 8d., equal 15s. 2·186d. per ton. Tramming 11,000 tons cost £350 13s. 7d., equal 7·651d. per ton. Crushing and sorting 11,000 tons cost £436 10s. 9d., equal 9·525d. per ton. Milling 11,000 tons cost £2030 18s. 2d., equal 3s. 8·310d. per ton. Total, £11,168 6s. 2d., equal 20s. 3·672d. per ton.—Tailings treatment. MacArthur Forrest process, and final clean up, 500 tons cost £210 13s. 5d. Siemens process 5400 tons cost £984 11s. Total, £12,363 10s. 7d. Profit, £6360 10s. 10d.—Expenditure on capital account. Construction, &c., £11,054 0s. 2d. Excess development, £946 11s. 8d. Total, £12,000 11s. 10d.

MOUNT LYELL.—Copy of the mine manager's report for week ending October 31:—South drive, No. 3 tunnel. This face has been driven 6 feet, total 1488 feet. Driving in fair grade pyrites.—Main crosscut, No. 4 tunnel. The crosscut has been driven 5 feet, total since resuming crosscutting 35 feet, and total from footwall of the pyrites 127 feet.—North drive, No. 4 tunnel. This drive has been advanced 6 feet, total 239 feet. Country schist, with bands of pyrites running through it.—South drive, No. 4 tunnel.—Drive advanced 6 feet, total 394 feet. No change to note.—No. 5 tunnel. 8 feet have been driven, making the total length 1137 feet. There is a change in the face, a hard mineralised rock having come in.—South drive, No. 5 tunnel. The face has been advanced 3 feet, total 19 feet. Country much harder.—North drive, No. 5 tunnel. 3 feet have been driven, total 11 feet. Face in schist, full of mineral.—Progress report for week ending November 1: Hauling line. Forming of terminus at mine progressing favourably.—Smelter building. Ventilators nearing completion, bins back of blast department in course of erection, one section furnace feed floor covered with iron roofing. Bin approach trestles nearing completion, and forming embankment of smelter bin siding in progress.—Furnace flue. Continuation to base of hill flue finished, latter in progress, excavation for flue up hill in hand.—Main chimney. Resumed shaft; height of work 28 feet above grade.—Boilers. Excavations for foundations in progress, ground bad. Start grading for furnace feed tank. Cutting for crusher siding from bins and excavation for crusher site in progress. Lime kiln alteration completed. Colonial and imported fire-bricks coming in. Whole construction plant running well. Weather variable.

MYSORE GOLD.—R. Hancock, November 27: Mining operations for the fortnight ending November 25: Rowse's shaft 1460 feet level north of crosscut west. This level has been driven 19 feet 6 inches, making a total distance driven of 309 feet 6 inches.—1460 feet level north of sump winze. The rise in the back of this level has been put up 17 feet, making a total height of 101 feet. The lode is 2 feet wide assaying 18 dwts. 6 grains. 1460 feet level south of sump winze driving south from the bottom of the south winze driven 10 feet, making a total distance driven of 258 feet.—1520 feet level north from the bottom of the above winze. This end has been driven 14 feet, making a total distance driven of 31 feet. The lode is 1 foot wide assaying 5 dwts. 5 grains.—1360 feet level south of crosscut. There are four stopes in the back of this level the average width of the lode being 2 feet 1 inch giving an average assay of 17 dwts.—1360 feet level north of crosscut. The lode in the stope in the back of this level is 2 feet 6 inches wide assaying 10 dwts.—1350 feet level north of sump winze. The rise in the back of this level has been put up 9 feet 6 inches, making a total height of 112 feet 6 inches. The lode is 3 feet wide assaying 9 dwts. 2 grains.—There are two stopes in the back of this level, the average width of the lode being 5 feet giving an average assay of 10 dwts. 2 grains.—1260 feet level north or north-east. This level has been driven 14 feet making a total distance driven of 942 feet 6 inches. There are seven stopes in this level, the average width of the lode being 3 feet 4 inches giving an average assay of 13 dwts. 1 grain.—1260 feet level south. This level has been driven 2 feet 6 inches, making a total distance driven of 256 feet 6 inches. There is nothing here to report There are three stopes in the back of this level, the average width of the lode being 2 feet 6 inches, giving an average assay of 1 ounce 2 dwts. 11 grains.—1160 feet level north, N.E. This level has been driven 16 feet, making a total distance driven of 712 feet 6 inches. On the 16th inst. we struck the lode which is at present 5 feet wide assaying 2 ounces. The lode in the stope in the back of this level is 1 foot 6 inches wide assaying 6 dwts. 12 grains.—1160 feet level south. The rise in the back of this level has been put up 5 feet, making a total height of 120 feet. This working has been temporarily suspended. There are five stopes in the back of this level, the average width of the lode being 1 foot 11 inches, giving an average assay of 1 ounce 5 dwts. 5 grains.—North of the crosscut east. The lode in the stope in the back of this level is 1 foot 6 inches wide assaying 1 ounce 10 dwts.—1060 feet level north of No. 2 crosscut. This level has been driven 25 feet, making a total distance driven of 193 feet 6 inches, the lode is 5 feet wide assaying 2 ounces 10 dwts. The winze in the bottom at the end of the crosscut has been sunk 16 feet, making a total depth of 98 feet 6 inches, the lode is 5 feet wide assaying 2 ounces 10 dwts. The rise in the back of this level has been put up 10 feet, making a total height of 20 feet, the lode is 5 feet wide assaying 1 ounce 15 dwts.—1060 feet level south of No. 2 crosscut. This level has been driven 16 feet 6 inches, making a total distance driven of 140 feet, the lode is 2 feet wide assaying 1 ounce 19 dwts.—890 feet level north. The lode in the stope in the back of this level is 3 feet wide assaying 2 ounces.—890 feet level north of crosscut. The rise in the back of this level has been put up 14 feet, making a total height of 23 feet 6 inches, the lode is 5 feet wide assaying 1 ounce 10 dwts. There are three stopes in the back of this level the average width of lode being 3 feet 4 inches, giving an average assay of 13 dwts. 17 grains 780 feet level north. The lode in the stope in the back of this level is 2 feet wide, assaying 17 dwts.—780 feet level north on new chute. The rise in the back of this level has been put up 8 feet, making a total height of 35 feet. The lode is 1 foot wide assaying 17 dwts. There are seven stopes in the back of this level the average width of the lode being 3 feet 2 inches, giving an average assay of 13 dwts. 6 grains.—620 feet level south. There are three stopes in the back of this level the average width of the lode being 1 foot 10 inches, giving an average assay of 6 dwts. 17 grains.—620 feet level north of crosscut. The lode in the stope in the bottom of this level is 2 feet wide assaying 2 ounces.—620 feet level south of crosscut. The lode in the stope in the back of this level is 1 foot wide assaying 5 dwts. 5 grains.—Crocker's shaft. This shaft has been sunk 24 feet, making a total depth of 124 feet below the 890.—236 feet level north. The lode in the stope in the back of this level is 2 feet wide assaying 13 dwts. 1 grain.—Gilbert's shaft. This shaft has been sunk 9 feet 6 inches, making a total depth of 108 feet 6 inches below the 650.—520 feet level north. There are three stopes in the back of this level the average width of the lode being 1 foot 11 inches, giving an average assay of 11 dwts. 21 grains.—520 feet level south. The winze in the bottom of this level has been sunk 3 feet 6 inches, making a total depth of 17 feet 6 inches. The lode is 1 foot 8 inches wide assaying 18 dwts. 6 grains. The lode in the stope in the back of this level is 2 feet wide assaying 4 dwts. 13 grains.—430 feet level north. The lode in the stope in the bottom of this level is 2 feet 6 inches wide assaying 5 dwts. 5 grains.—360 feet level north. The lode in the stope in the back of this level is 2 feet wide assaying 6 dwts. 12 grains.—290 feet level north. There are two stopes in this level the average width of the lode being 2 feet, giving an average assay of 10 dwts. 10 grains.—180 feet level south. There are two stopes in the back of this level the average width of the lode being 2 feet 3 inches, giving an average assay of 17 dwts. 22 grains.—Tennant's shaft, 750 feet level north of crossout west. This level has been driven 15 feet, making a total distance driven of 204 feet. The lode is 1 foot 2 inches wide assaying 6 dwts. 12 grains.—360 feet level north, south of crosscut. The lode in the stope in the bottom of this level is 2 feet wide assaying 6 dwts. 12 grains.—290 feet level south. The lode in the stope in the back of this level is 2 feet wide assaying 13 dwts. 1 grain.—Schaw's shaft, 450 feet level, north of crosscut. There are three stopes in the back of this level, the average width of the lode being 1 foot 1 inch, giving an average assay of 1 ounce 3 dwts.—450 feet level, south of crosscut. There are two stopes in the back of this level, the average width of the lode being 1 foot 7 inches, giving an average assay of 7 dwts. 2 grains.—320 feet level north. The lode in the stope in the back of this level is 3 feet wide, assaying 5 dwts. 5 grains.—McTaggart's shaft. This shaft has been sunk 6 feet 6 inches, making a total depth of 131 feet 9 inches below the 550.—550 feet level north. This level has been driven 15 feet 9 inches, making a total distance driven of 298 feet 2 inches. The lode is 1 foot 6 inches wide assaying 1 ounce. On the 16th inst. this level holed to the winze sunk in the bottom of the 450 feet level north of crosscut.—550 feet level, south of crosscut west. This level has been driven 16 feet 9 inches, making a total distance driven of 264 feet 3 inches. The lode is 6 inches wide assaying 6 dwts. 12 grains. The winze in the bottom of this level has been sunk 4 feet, making a total depth of 38 feet 6 inches. The lode is 2 feet 6 inches wide assaying 10 dwts. There are two stopes in the back of this level, the average width of the lode being 2 feet 3 inches, giving an average assay of 8 dwts. 6 grains.—320 feet level south There are two stopes in the back of this level, the average width of the lode being 2 feet 3 inches, giving an average assay of 6 dwts. 19 grains.—Prospect shaft No. 2. This shaft has been sunk 3 feet, making a total depth of 112 feet. The sinking has been greatly hindered by water.—Ribblesdale's shaft below 1460. Sunk 12 feet 6 inches, making a total depth of 37 feet. The lode is 2 feet wide assaying 2 dwts.—1460 rise. This has been put up 5 feet 6 inches, making a total height of 76 feet.—Below 1060. Sunk 12 feet, making a total depth of 116 feet. Crosscut west from the 1060. This has been driven 10 feet, making a total distance driven of 26 feet 6 inches.—Williams' shaft. Crosscut east from the 173. This end has been driven 4 feet, making a total distance driven of 161 feet. Health good.

NUNDYDROOG.—Thomas Richards, November 27: Report for the fortnight ending November 23: Taylor's shaft. The 1240 feet level south has been driven 11 feet 3 inches, total distance 132 feet 9 inches. The lode consists of stringers of quartz which assay a trace of gold. The 1240 north has been driven 7 feet 3 inches, total distance 169 feet 9 inches. As the part of the lode which has been followed in this drivage has continued poor for some distance a crosscut has been put out westward from the end north 10 feet, and no further portion of the lode having been met with in that direction a crosscut east has now been commenced. In the stope in the back of the 1000 north the lode 2 feet wide assays 3 dwts. 18 grains. The 920 south rise has been put up 15 feet. Lode 1 foot wide assays 4 dwts. 9 grains. The 920 north has been driven 13 feet 6 inches, total distance 267 feet. Lode 1 foot wide assays 3 dwts. 3 grains. In the stope in the back of the 840 north the lode is 2 feet 6 inches wide and assays 1 ounce 15 dwts. The lode in the stope in the back of the 760 north is 3 feet wide and assays 6 dwts. 6 grains. In two stopes between the 600 and 520 levels north the lode averages 2 feet 3 inches in width and 17 dwts. 12 grains in assay value. The lode in the stope in the back of the 520 north is 2 feet wide and assays 5 dwts. In the stope in the back of the 230 south the lode is 4 feet wide and assays 15 dwts. Main shaft has been sunk 5 feet 6 inches, total depth 56 feet 6 inches below the 1080 feet level. Lode of no assay value. The 1080 north crosscut west has been extended 4 feet 6 inches, total distance is 13 feet. No change. A crosscut has also been put out eastward at this point, and at 13 feet what seems to be the main portion of the lode has been intersected. This has been cut into 2 feet—the footwall not having yet been reached—and assays 3 ounces 1 dwt. 6 grains. The 1080 north rise has been put up 4 feet, total height 79 feet 6 inches, and communicated with the 1000 feet level north. This has secured good ventilation for this part of the mine, and has laid open a valuable section of ore ground. The 1000 north has been driven 9 feet 3 inches, total distance 292 feet. Lode consists of quartz stringers of no assay value. In the stope in the back of the 1000 south the lode 7 feet wide, assays 11 dwts. 6 grains. In two stopes above and below the 920 south the lode averages 5 feet in width and 1 ounce 3 dwts. 3 grains in assay value, and in the stope in the back of the 920 north it is 5 feet wide, of an assay value of 2 ounces 8 dwts. 5 grains. In two stopes in the back of the 840 south the lode averages 4 feet in width, and 5 dwts. 15 grains in assay value. The 680 north has been driven 12 feet 6 inches, total distance 471 feet 6 inches. Lode of no assay value. The 520 north has been driven 20 feet, total distance 182 feet 9 inches. Lode of no assay value. The 370 north has been driven 11 feet, total distance 80 feet. Lode well defined, but of of no assay value.—Kennedy's shaft. The 700 feet level crosscut west has been extended 22 feet 6 inches, total distance 27 feet. The 600 south has been driven 24 feet, total distance 245 feet 6 inches. Lode 1 foot 6 inches wide assays 1 ounce 15 dwts. The 600 south rise has been put up 21 feet 3 inches, total height 40 feet 9 inches. Lode 3 feet wide, assays 5 dwts. The 600 north has been driven 16 feet 3 inches, total distance 279 feet. Lode 4 inches wide, assays 2 ounces. In the stope in the back of the 520 north the lode is 3 feet wide assays 5 dwts. The 440 south has been driven 18 feet 3 inches, total distance 1153 feet 6 inches. Lode of no assay value. In the stope in the back of this level the lode is 5 feet wide, and assays 3 ounces 7 dwts. 12 grains. The 440 south crosscut west has been advanced 12 feet 6 inches, total distance 32 feet. No change. The 370 south has been driven 31 feet 6 inches, total distance 937 feet. Lode 1 foot wide, assays a trace of gold. The 370 south rise has been put up 20 feet 6 inches, total height 91 feet, and communicated with the 300 feet level. At the point of communication the lode is 1 foot wide, and assays 6 dwts. 6 grains The 370 north crosscut west has been extended 13 feet 3 inches, total distance 423 feet 3 inches. No change. In the stope in the back of the 370 north the lode is 4 feet wide assays 3 ounces 5 dwts. The 300 south crosscut east has been advanced 15 feet 6 inches, total distance 30 feet 3 inches. No change and crosscut suspended. In the stope in the back of this level the lode is 2 feet wide, and assays 3 ounces 6 dwts. 6 grains. A new rise has been commenced in the back of the 300 south at 400 feet from the shaft, where the lode 6 inches wide assays 11 dwts. 8 grains. The 300 north rise has been put up 8 feet 6 inches, total height 69 feet 6 inches. Lode 2 feet wide assays 5 dwts. In the stope in the back of the 230 north the lode is 5 feet wide, and assays 12 dwts. 12 grains. The 160 south has been driven 5 feet 6 inches, total distance 245 feet. Lode of no assay value. In the stope in the bottom of the 160 north the lode is 3 feet wide, and assays 11 dwts. 6 grains. The 160 north rise on the footwall part of the lode has been put up 19 feet, total height 28 feet 6 inches. Lode 4 feet wide assays 7 dwts. 12 grains.—North shaft has been cut down full size to the depth of the 600 feet level, and sinking below this level has now been commenced.—Old Mill samples Pulp. 1 ounce 3 dwts. 18 grains; tailings 3 dwts. 18 grains.—New Mill samples Pulp. 1 ounce 8 dwts. 18 grains; tailings 4 dwts. 6 grains. The 230 south has been driven 19 feet, total distance 171 feet 6 inches. Lode 6 inches wide assays 2 ounces.

VAN RYN GOLD MINES ESTATE.—The following is from the report on operations for month ending October 31: The Mines. General manager reports: Mine No. 4. New main shaft sinking 52¾ feet. New main shaft rising 63 feet. Old main shaft sinking 5 feet. Driving 4th level 208 feet. Drives, 1st level on leader No. 5 drive 83 feet. Drives 1st level on leader No. 1 drive 35 feet. Drives 1st level on leader No. 6 drive 7½ feet. Crosscut south 1st level 7½ feet.—Mine No. 8. Driving 1st level 102 feet. Driving 2nd level 243 feet. Sinking main shaft to 3rd level 20¾ feet. Rising 4E east winze 40 feet. Total for month 867½ feet.—Ore Developed. Mine No. 4. 4th level 5400 tons. Leader 3053 tons. Mine No. 8. 1st level 2157 tons. 2nd level 5843 tons. Total 16,463 tons.—Ore in sight. Mine No. 4. 1st level 10,323 tons. 2nd level 6510 tons. 3rd level 17,794 tons. 4th level 12,219 tons. Total 46,846 tons.—Mine No. 8. 1st level 22,164 tons. 2nd level 15,061—37,225 tons. Total 84,071. The above is a conservative estimate of ore in sight.—Stamp mill. 50 stamps ran 27·3 days during October. Ore crushed 4617 tons. Crushed per stamp per day of 24 hours, 3·34 tons. Gold won (plates and concentrates) 2270 ounces. Average yield of gold from plates and concentrates 9·81 per ton.—Cyanide works. Tonnage treated 5125. Cost per ton 4s. 11½d. Actual extraction 71·47 per cent. Assay value 3 dwts. 11 grains. Old tailings nearly finished. Shall have to use mixed tailings and slimes, but to get these in order for leaching will cost an extra 8d. per ton.—New works. Battery. House finished. Mortar boxes in place, and ore bins completed. Very good work has been put on the new battery and house. The battery *per se* could be finished in a month. Buildings. New quarters for 24 Europeans finished and occupied. Cyanide works. Excavations in hand.—General remarks. Reduction in mining costs is mostly due to our taking a larger proportion of ore from No. 8 mine. Development is progressing favourably. Native labour is scarce, dear, and poor. So far, we have not been short nor hard pressed.—Profit. Profit for month of October (plates and concentrates) £2861 1s. 1d. Estimated profit (cyanide works) £1042 13s. 5d. Total profit for month, £3903 14s. 6d.

YERRAKONDA.—Report for fortnight ending November 27: Beresford's shaft has been sunk 2 feet, now 160 feet below the 300 feet level. The lode is 5 feet wide. There is 2 feet 6 inches of quartz against the hanging wall assaying 5 dwts. of gold to the ton. 200 feet level north has been advanced 3 feet 6 inches, now 439 feet from shaft. The lode is 2 feet wide, composed of quartz, country rock, and arsenical pyrites, assaying 2 dwts. 6 grains of gold to the ton. Crosscut north east of 200 feet level north has been advanced 11 feet. The rock we are now cutting through is hard hornblende schist. South shaft has been sunk 12 feet, now 202 feet from the surface. The lode is 3 feet 6 inches wide, of which 1 foot 9 inches is solid quartz assaying 4 dwts. of gold to the ton. New Prospect shaft has been sunk 1 foot 6 inches, now 93 feet from surface. The lode is somewhat disordered in the bottom and we have commenced to drive north and south on the lode to prove it in length. The north end at the 90 feet level has been extended 3 feet. The lode is 3 feet wide, composed of quartz assaying 2 dwts. 12 grains of gold to the ton. The south end at the 90 feet level has been advanced 2 feet. The lode is 3 feet wide, composed of quartz assaying 3 dwts. of gold to the ton.—Prospecting on Lakkanhalli Block. The trial shaft referred to in my last has been sunk 14 feet, now 25 feet from surface. We have passed through a branch of quartz, showing a little free gold in the pan. A few feet more sinking we shall strike the ancient working.

BAYLEY'S REWARD CLAIM.—Referring to the cable dated 2nd inst. received by this company's London office from the head office in Melbourne, stating that work had been stopped on the mine for want of water, the Melbourne secretary writes under date November 11 as follows:—It had been decided to continue sinking the main shaft (Sylvester) for another 100 feet, and Mr. Matthews has been so informed, but he now telegraphs that the Consols Company have raised the price of the water from 2s. 6d. to 4s. 6d. per 100 gallons. A committee of the directors met yesterday and decided to refuse to pay such a price, and rather than pay it to stop the battery for the present. You will probably have had a cable to this effect before this reaches you.

BRITISH BROKEN HILL PROPRIETARY.—Mining manager's report for the week ending November 6: Blackwood shaft. 300 level west crosscut advanced 7 feet, total from plat 77 feet, with no change in ground.—200 level. No. 1 winze in No. 1 west crosscut sunk 3 feet, total depth 54 feet; bottom in milling sulphides. In cleaning out reserve stacked in stopes around No. 1 winze we obtained 17 tons sulphides assaying 29 per cent. lead, 18 ounces silver, and 24 per cent. zinc. North drive off long crosscut driven 3 feet, total 18 feet, face carrying sulphides of milling grade; we pick out 7 tons sulphides averaging 20 per cent. lead, 12 ounces silver, and 25 per cent. zinc. South drive off long crosscut lengthened 8 feet, total 18 feet, with splendid face of good grade sulphides showing. We mined 27 tons sulphides averaging 25 per cent. lead, 15 ounces silver, and 20 per cent. zinc.—Howell shaft. 300 level west crosscut extended 6 feet, total 153 feet; no change; continued fossicking on soft sulphide lode over roof of east crosscut where we have drifted 65 feet on lode both north and south. We mined in fossicking over the crosscut 35 tons sulphides assaying 31 per cent. lead, 8 ounces silver, 15 per cent. zinc: 200 level south drive off No. 2 west crosscut lengthened 7 feet, total 35 feet, showing good face of sulphide ore. We mined 25 tons sulphides in driving average 20 per cent. lead, 11 ounces silver, and 25 per cent. zinc. No. 2 west crosscut extended 9 feet, total from timber 17 feet, sulphides of medium grade showing. We mined 23 tons sulphides averaging 20 per cent. lead, 10 ounces silver, and 30 per cent. zinc.—Junction 300 level. North drive lengthened 9 feet, total length 82 feet, face now entering sulphide ore of a softer nature.—Surface. Jig plant: The masons and carpenters are making good headway with the erection of heavy foundations and framework of large building respectively. Excavations on top floors about finished, and have now started excavating on lower floors, which, however, are not so massive as those on top sections.—Ore shipments. Contents of last week's shipments to Block 14 Mine—viz., 134½ tons, were as follows:—Lead 41 tons, silver 1590 ounces. We shipped another parcel to them weighing 124 tons gross. Week's assays of sulphides vary from 9 to 41 per cent. lead, 5·5 to 18·6 ounces silver per ton, and 6·8 to 31 per cent. zinc.

LONE HAND.—The following is an extract from the Perth, Western Australia, *Inquirer and Commercial News*, dated November 15:—The manager, Mr. Crossland, was away at Perth, and we were told that operations had ceased during the exemptions. We saw no one about and concluded that this was so, but later we learned that two shifts—a morning and afternoon shift—are being kept going. The mine, however, is historical. It was taken up by Dunn, who although he got nothing on the surface had faith in the lode, and went down on it until at the 70 feet he struck gold—and struck it rich. The shaft is now down 107 feet, and what the show is like there may be inferred from the fact that the ropes are pulled up every night. The specimen thieves would not be above going below for some of the stone. At 107 feet the reef I was told is clean and well defined, and goes down strong, showing that the lode has the true fissure characteristics. The True Blue and Lady Douglas are idle, and so is Murdock's and Vincent's, all of which are on the line, and have shown some splendid stone.

FURTHER REPORTS WILL BE SEEN ON PAGE 1563